

**Abstract of the Disclosure**

Provided are recombinant constructs comprising DNA sequences encoding enzymes effective in altering the biosynthesis and accumulation of sterol compounds and tocopherols in transgenic plants. Also provided are methods of using such constructs to produce transgenic plants, seeds of which contain elevated levels of sitostanol and/or sitostanol esters, and  $\alpha$ -tocopherol, as well as reduced levels of campesterol and campestanol and their corresponding esters. These seeds also contain the novel sterol brassicastanol. Oil obtained from seeds of such transgenic plants is also provided. This oil can be used to prepare food and pharmaceutical compositions effective in lowering the level of low density lipoprotein cholesterol in blood serum. In addition, novel DNA sequences encoding plant steroid  $5\alpha$ -reductases are also disclosed.